Hydrologic Model Manager

Short Name	GBHM
Long Name	Geomorphology-Based Hydrological Model
Description	
Model Type	Physically-based distributed hydrological model
Model Objectives	Rainfall-runoff simulation, water resources analysis in large river basins
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Model Structure	Flow interval-hillslope discretization scheme; physically based hillslope response model coupled with kinematic flow routing model
Interception	
Groundwater	
Snowmelt	
Precipitation	
Evapo-transpiration	
Infiltration	
Model Paramters	Topographical parameters (hillslope length, angle, and elevation) estimated from DEM; soil water parameters estimated from field
Spatial Scale	Non-constant hillslope size, less than 1 -km in most case Temporal Scale Employed in the Model: One hour
Temporal Scale	
Input Requirements	Daily potential evaporation, hourly precipitation and air temperature Computer Requirements: PC or Workstation
Computer Requirements	
Model Output	River discharge at selected points, soil moisture, and actual evaporation
Parameter Estimatn Model Calibrtn	The anisotropy ratio of soil hydraulic conductivity, ra is not measurable, which needs to be calibrated.
Model Testing Verification	Has been done in four Japanese catchments
Model Sensitivity	Hourly (or higher temporal resolution) hydrological responses are sensitive to the DEM resolution and the threshold area that used to extract the river network. The DEM resolution is suggested to be fouler than 1-km; the threshold area is suggested to be less than 1-km2.
Model Reliabiity	Stable for long-term hydrological simulations
Model Application	The Chao Phraya basin in Thailand, the Chaobai He catchment of the Haihe basin in China
Documentation	No

Other Comments	It needs GIS software (ARC/INFO) to support the pre-processes for preparing model parameters.
Date of Submission	5/8/2001 1:59:55 PM
Developer	
Technical Contact	
Contact Organization	